

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-024520**Date Inspected:** 20-Jun-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** William Sherwood**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girder & Tower**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed on the various field fit-up of weld joints and the Complete Joint Penetration (CJP) groove welds of the East Orthotropic Box Girders (OBG's) and Tower. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) and the Flux Cored Arc Welding (FCAW).

A). Lifting Lug Holes

The QAI observed the CJP welding of the lifting lug holes identified as WN: 9E-PP77-E3, W1 & W3. The welding was performed by Jorge Lopez ID-6149 utilizing the WPS identified as ABF-WPS-D15-1050A-CU, Rev. 0 and 1110A, Rev. 1. The QAI also observed the QC inspector perform the visual inspection and verify the welding parameters during the production welding. The inspection performed by William Sherwood appeared to comply with the contract specifications. The welding of this joint was not completed during this scheduled shift.

B). East Tower Shaft/Splice Plates

The QAI also observed the installation, fit-up and tack welding of the splice plates located 114 meter elevation at the east corner of the East Tower Shaft identified as WN: 165 and 166. This task was performed by the fitter/welder Mike Jiminez ID-4671 utilizing the FCAW-G process as per the WPS ABF-WPS-D15-F2200-3 and F2200-2, Rev. 0. The fit-up and tack welding was not completed during this scheduled shift.

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

C). E12 Orthotropic Box Girder

Observed the erection of the OBG into it's approximate position onto the temporary truss and later to be mobilized into it's permanent position abutted to OBG E11. The erection was completed during this scheduled shift and mobilization is in progress.

D). Bike Path/Threaded Studs

The QAI observed ABF personnel Julian Paulk ID-7796 perform the welding of the 22mm threaded studs to the cantilevered supports beams. The stud welding was performed utilizing the WPS identified as ABF-WPS-D15-5001-Stud which was also used by the QC inspector, William Sherwood, to monitor the welding and to perform a preproduction test as per the contract documents. The welding and the inspection was performed and appeared to comply with contract specifications on the cantilever beams located between PP57 through PP69. The QAI concurs with the QC inspector's assessment.

The QAI also observed three (3) studs that failed the QC visual inspection due to lack of a 360 degree flash located at the base of the shank to base material. These studs were removed and the base material surface was finished to a bright metal. This operation was performed by Mr. Paulk utilizing a 4" grinder. At the conclusion of the grinding the QC inspector performed the MPT and new studs were welded in place. The QC inspector performed a visual inspection and no areas were noted for repair. The QAI concurs with the QC inspector's assessment. The welding and inspection appeared to comply with the contract specifications. The location of the 3 studs are as follows; PP61-NE, PP65-SE and PP67-SE.

This QA Inspector also performed a daily review and update of the field document control tracking records regarding the Orthotropic Box Girders, Longitudinal and Transverse "A" Deck Stiffeners and Deck Access Holes.

QA Summary

The welding was performed in the flat, overhead and vertical positions utilizing the E7018-H4R low hydrogen and E71T-1 consumables. The 3.2 mm and 4.0 mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The WPS's were also utilized by the QC inspector's as a reference to monitor the welding operation, verify the welding parameters and verify the minimum preheat and the interpass temperatures. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter for the electrical welding parameters and Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

The digital photographs on page 3 of this report illustrate some of the work observed during this scheduled shift.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)



Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Mike Johnson, at the start of the shift regarding the location of welding, inspection and N.D.E. testing personnel scheduled for this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Reyes, Danny

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer